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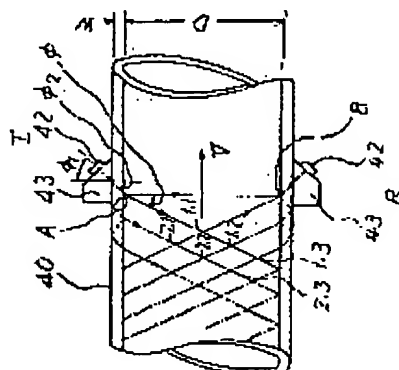
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(54) PULSE SYSTEM ULTRASONIC-WAVE DOPPLER CURRENT METER

(57)Abstract:

PURPOSE: To measure a flow rate high accurate with rapid response, by permeating an outer wall of a pipe by utilizing a fact that direct-wave signals and scattering reflected signals are similar to transmitting signals emitted into a fluid in wave-forms.

CONSTITUTION: Ultrasonic-wave pulses emitted from a trembler 42 are projected to an outer wall 40 of a pipe from a wedge 43 at an angle of incidence ϕ_1 , advance in a pipe wall at an angle of refraction ϕ_2 , is projected to a fluid at an angle of incidence ϕ_3 at a point A and move on in the fluid at an angle of refraction ϕ_4 . Scattering reflected waves are produced when ultrasonic waves collide with particles flowing at the same speed as the fluid, but points 1.1, 1.2... function as points that give receiving waves with excellent efficiency, and reflected waves from these all points are received when using ultrasonic waves consisting of continuous waves. Generally speaking, the speed of a fluid flowing in a pipe is fast at the center of the pipe and becomes later the nearer a pipe wall is, but scattering reflected waves from the points 1.1 and 1.2 or 2.1 are separated and received because ultrasonic waves with narrow pulse width are used at that time, thus measuring a flow rate of the fluid accurately, rapidly and high precise.



LEGAL STATUS

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